

IN THE CLAIMS

Following are the current claims. For the claims that have NOT been amended in this response, any difference between the claims below and the current state of the claims is unintentional and in the nature of a typographical error:

1. (Currently Amended) A method of enhancing throughput of a multi-stage pipelined encryption/decryption engine for an encryption/decryption process when used with an encryption/decryption mode of operation requiring feedback around the pipelined engine, the method comprising the steps of:

aggregating together multiple security contexts and establishing an entry in a bank of initial variables for each context, there being at least as many encryption/decryption security context identifiers as a predetermined number of stages in the encryption/decryption process;

receiving, for input to the multi-stage pipelined encryption/decryption engine, a source datablock for a given encryption/decryption security context identifier;

indexing according to the encryption/decryption security context identifier into the bank of initial variables to retrieve an initial variable for the source datablock, the bank comprising a plurality of initial variables for each encryption/decryption security context identifier;

generating an output datablock from the source datablock and its corresponding initial variable; and

replacing [an] the initial variable in the bank of initial variables with a new seed, as determined by a selected mode of operation, for the security context identifier.

2. (Canceled)

3. (Canceled)

4. (Previously Amended) The method of claim 1 wherein the mode of operation of the encryption/decryption process requires feedback around the encryption/decryption engine such as Cipher Block Chaining Mode with exception of handling of initial variables.

5. (Currently Amended) The method of claim [4] 1 wherein the encryption/decryption process comprises a block cipher capable of being pipelined such as Digital Encryption Standard (DES).

6. (Canceled)

7. (Canceled)

8. (Canceled)

9. (Canceled)

10. (Canceled)

11. (Canceled)

12. (Currently Amended) A multi-stage pipelined encryption engine for an encryption/decryption process when used with an encryption/decryption mode of operation requiring feedback around the stages, the encryption/decryption engine comprising:

means for aggregating together multiple security contexts and establishing an entry in a bank of initial variables for each context, there being at least as many encryption/decryption security context identifiers as a predetermined number of stages in the encryption/decryption process;

means for receiving, for input to the multi-stage pipelined encryption/decryption engine, a source datablock for a given encryption/decryption security context identifier, there being at least as many encryption/decryption security context identifiers as the predetermined number of stages in the encryption/decryption process;

means for indexing according to the encryption/decryption security context identifier into a bank of initial variables to retrieve an initial variable for the source datablock, the bank comprising a plurality of initial variables for each encryption/decryption security context identifier;

means for generating an output datablock from the source datablock and its corresponding initial variable; and

means for replacing [an] the initial variable in the bank of initial variables with a new seed, as determined by a selected mode of operation, for the security context identifier.

13. (Canceled)

14. (Canceled)

15. (Previously Amended) The encryption/decryption engine of claim 12 wherein the mode of operation of the encryption/decryption process requires feedback around the encryption/decryption engine such as Cipher Block Chaining Mode with exception of handling of initial variables.
16. (Currently Amended) The encryption/decryption engine of claim [15] 12 wherein the encryption/decryption process comprises a block cipher capable of being pipelined such as Digital Encryption Standard (DES).
17. (Canceled)
18. (Canceled)
19. (Canceled)
20. (Canceled)
21. (Canceled)
22. (Currently Amended) A method of enhancing throughput of a multi-stage pipelined encryption/decryption engine for an encryption/decryption process when used with an encryption/decryption mode of operation requiring feedback around the pipelined engine, the method comprising the steps of:

separating one data stream into multiple interleaved data streams, each having its own encryption/decryption security context;

aggregating together the multiple security contexts and establishing an entry in a bank of initial variables for each context, there being at least as many encryption/decryption security context identifiers as a predetermined number of stages in the encryption/decryption process;

receiving, for input to the multi-stage pipelined encryption/decryption engine, a source datablock for a given encryption/decryption security context identifier[, there being at least as many encryption/decryption security context identifiers as the predetermined number of stages in the encryption/decryption process];

indexing according to the encryption/decryption security context identifier into the bank of initial variables to retrieve an initial variable for the source datablock, the bank comprising a plurality of initial variables for each encryption/decryption security context identifier;

generating an output datablock from the source datablock and its corresponding initial variable; and

replacing [an] the initial variable in the bank of initial variables with a new seed, as determined by a selected mode of operation, for the security context identifier.

23. (Previously Added) The method of claim 22 wherein the mode of operation of the encryption/decryption process requires feedback around the encryption/decryption engine such as Cipher Block Chaining Mode with exception of handling of initial variables.

24. (Currently Amended) The method of claim [23] 22 wherein the encryption/decryption process comprises a block cipher capable of being pipelined such as Digital Encryption Standard (DES).

25. (Currently Amended) A multi-stage pipelined encryption engine for an encryption/decryption process when used with an encryption/decryption mode of operation requiring feedback around the stages, the encryption/decryption engine comprising:

means for separating one data stream into multiple interleaved data streams, each having its own encryption/decryption security context

means for aggregating together the multiple security contexts and establishing an entry in a bank of initial variables for each context, there being at least as many encryption/decryption security context identifiers as a predetermined number of stages in the encryption/decryption process;

means for receiving, for input to the multi-stage pipelined encryption/decryption engine, a source datablock for a given encryption/decryption security context identifier, there being at least as many encryption/decryption security context identifiers as the predetermined number of stages in the encryption/decryption process;

means for indexing according to the encryption/decryption security context identifier into a bank of initial variables to retrieve an initial variable for the source datablock, the bank comprising a plurality of initial variables for each encryption/decryption security context identifier;

means for generating an output datablock from the source datablock and its corresponding initial variable; and

means for replacing [an] the initial variable in the bank of initial variables with a new seed, as determined by a selected mode of operation, for the security context identifier.

26. (Currently Amended) The encryption/decryption engine of claim 25 wherein the mode of operation of the encryption/decryption process requires feedback around the encryption/decryption engine such as Cipher Block Chaining Mode with exception of handling of initial variables.

27. (Currently Amended) The encryption/decryption engine of claim [26] 25 wherein the encryption/decryption process comprises a block cipher capable of being pipelined such as Digital Encryption Standard (DES).